



Integration Note

Manufacturer:	SpeakerCraft
Model Number(s):	MZC-64, MZC-66, MZC-88
Core Module Versions:	ELAN Core Module version 4.0 Build 1437- version 5.9.28 for zone controller and source control 6.0.236 and newer includes zone controller integration only, no virtual keypads for source control.
Comments:	See table below for tested software and firmware versions.
Document Revision Date:	10/31/12

OVERVIEW AND SUPPORTED FEATURES

IMPORTANT!

RSA-1.0: The RSA-1.0 RS232 interface adapter *is required* for reliable communication between the SpeakerCraft and g!.

SpeakerCraft may be controlled via Global Cache Ver. 3.0 COM ports; earlier versions of the Global Cache are not compatible.

THE FOLLOWING FEATURES ARE SUPPORTED:

Traditional Whole-House Audio & Video: The SpeakerCraft MZC-88 has two internal AM/FM tuners and six external source inputs that can be selected for any of its eight zones. The SpeakerCraft has customizable keypads for each zone that can control the volume and source for that zone. An RS-232 connection from the Zone Controller **via the RSA-1.0** to the **g!** system enables reliable two-way communication for control of the A/V distribution using touchscreens or PC's in the home. See **SpeakerCraft Programming** below for more details.

IR Source Control: The SpeakerCraft zone keypads can be programmed to control the sources using IR. **g!** can be configured to activate the buttons on Master or Expansion Keypads from the **g!** interface to allow control of the sources from the touch screen. See **Keypad and IR Programming** below for more details.

Contact Closures: The contact closures can be controlled from **g!**.

Multiple Controllers: Up to four SpeakerCraft MZC-88 units can be daisy-chained together for a total of 32 zones. Multiple controllers can only be daisy chained with identical controllers. For example, MZC-88 units cannot be daisy-chained with MZC-66 or MZC-64 units.

MODE Keypads and iPod peripheral interface (up to v5.9): The SpeakerCraft MODE series of keypads, adapters, and iPod Base are supported. Multiple units may be used in a single install. See SpeakerCraft documentation for more information. Bear in mind, as with all iPod docks, there may be some hesitation beyond our control due to the slow port speed of the iPod.

THE FOLLOWING FEATURES ARE NOT SUPPORTED:

Virtual Keypads for source control (v6): source control via virtual keypads is not supported in version 6.0.

OSD/HR2/TS2 Controllers: The g! software On-Screen Display, HR2 and the TS2 **WILL NOT FUNCTION CORRECTLY** with this zone controller's source devices and is specifically **NOT** supported.

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Source control in an “output from zone” configuration: virtual keypads for source control will not work unless they are directly in a Russound zone. They will not work when a zone from Russound is configured as a source in another zone controller.

Internal AM/FM tuners: The SpeakerCraft internal tuners can not be directly tuned from the **g!** interface, nor can new presets be saved from the **g!** Viewer. Available tuner commands are Seek Up, Seek Down, AM, FM, and Preset 1 through 10.

Slave Tuners: Slave tuners in multi-chassis installs are not externally controllable. Only the 1st chassis tuner will be available for control in a multi-chassis install.

Party Mode: Party mode can be activated from the **g!** interface to initially set all enrolled zones to the master zone source; however any subsequent source changes in the master zone from **g!** will NOT switch all of the enrolled party zones sources.

IR Source Control through MODE Keypads is not supported at this time.

Any feature not specifically noted as supported should be assumed to be unsupported.
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INSTALLATION OVERVIEW

CHECK SOFTWARE AND FIRMWARE

The tested firmware and software versions are listed in the table below. Confirm that the system to be integrated is using a version at least as new as the ones in the table. See additional notes in

SpeakerCraft Programming below.

1. Install the EZ Tools software.
2. From the **Help** menu select **About EZ Tools** to check the software version.
3. Connect the PC to the SpeakerCraft using the 3.5mm to serial Plug Transfer Cable.
4. In the software select **Tools** then **Settings** to assign the COM port for programming the unit.
5. Power up the unit and select **Tools** then **Get Product & Firmware Version** to determine the unit firmware.

EZ Tools Software Version:	3.1.2 (Build 1899)
MZC Firmware version:	2.2.4
RSA-1.0 Firmware version:	2.0.5

INSTALL SYSTEM

1. During the rough-in phase, install speaker wire for the speakers and cable for keypads, in each zone.
2. Also during the rough-in phase, run a Cat5 wire from the location of the Zone Controller back to the Network Assembly of the **g!** system for RS-232 communications. Refer to the **RS-232 Connection Options** Integration Note for other options and cable length limitations.
3. Mount the speakers and keypads in each zone, and install the Zone Controller and the sources.
4. Setup the SpeakerCraft. This consists of configuring the keypads and programming the IR control using the **EZ Tools** software as explained in the SpeakerCraft documentation.
5. Test the entire SpeakerCraft system to ensure that all the sources play correctly in every zone, and that the keypad buttons behave correctly from the keypads.
6. Connect the **g!** system to the SpeakerCraft system electrically. See the wiring diagrams for more information.

7. Configure the **g!** system for the SpeakerCraft and confirm communication between it and the **g!** system controller.
8. Test the system by changing sources in a zone to confirm the correct source plays, and by testing the **g!** interface transport controls.

SPEAKERCRAFT PROGRAMMING

The SpeakerCraft must be properly programmed using EZ-Tools prior to connection to **g!**. Programming is accomplished through a special 3.5mm MINI to DB-9 Female SpeakerCraft programming cable and this cable is only needed during the programming phase. You may obtain this cable from SpeakerCraft in the following ways:

1. **Order cable only:** SpeakerCraft 3.5mm Plug Transfer Cable – Serial DB9 Connector, SpeakerCraft Part#CTL07107
2. **Order the optional LTM-1.0 Kit Learn/Test Module:** this kit includes the special 3.5mm Plug Transfer Cable

Connect to this cable for programming through a straight DB-9 /RJ-45 or serial cable, NULL Modem is **NOT** required.

RSA-1.0 PROGRAMMING

The RSA-1.0 device may be configured for multiple uses, and each configuration requires the loading of the correct type of firmware onto the RSA-1.0 in EZ-Tools. To load the correct firmware onto the RSA for controlling the MZC unit(s) in the **g!** interface, complete the following steps:

1. Connect a PC COM port to the Control Port on the RSA-1.0 using the SpeakerCraft programming cable. Do NOT use a NULL modem cable.
2. Connect the RSA-1.0 Expansion Port to the MZC Expansion Loop to supply power, or alternatively use a SpeakerCraft PS-1 or equivalent 12v 150mA power supply to power the RSA-1.0.
3. You can check the firmware that is installed on the RSA-1 by starting EZ Tools and in the menu bar select "Tools / Get Product Firmware & Version". **It must be "RSA-1.0 (MZC Control Interface)".** If your RSA-1.0 already has the correct firmware, skip the remaining steps and move on to **MZC Programming**. If not, reprogram the firmware as follows:
4. In the menu bar select "Tools / Update Product Firmware".
5. In the "Select Product" field in the dialog box select "RSA-1.0 (MZC Control Interface)".
6. Follow the on screen instructions to complete firmware update on the RSA-1.0.
7. When complete, you may remove programming cable from the Control Port and connect as illustrated in the **Connection Diagram** below.

MZC PROGRAMMING

Connect to the MZC with the SpeakerCraft Programming Cable. Connection may be made to the MZC's Control Port under the removable plate at the front of the unit, or through the Control Port mini jack on the rear of the unit.

Program your job in EZ-Tools to normal SpeakerCraft specifications, with the following notations:

- Add the RSA-1.0 device as an Expansion device to your configuration.
- Correctly set the address of all Keypads, Adapters, etc.
- Fully program all Keypads in the system to enable proper tracking in **g!**. Note that you **must** configure a keypad in every zone you want to control in **g!** for proper operation.
- Sources may be selected as available on a zone by zone basis in EZ-Tools. Be sure to mark sources as available as EZ-Tools default is no sources available, and ensure to setup **g!** configuration to match for proper operation.
- When you've finished programming in EZ-Tools, make sure you both Save the file for your records and Download it to the devices to ensure proper programming.

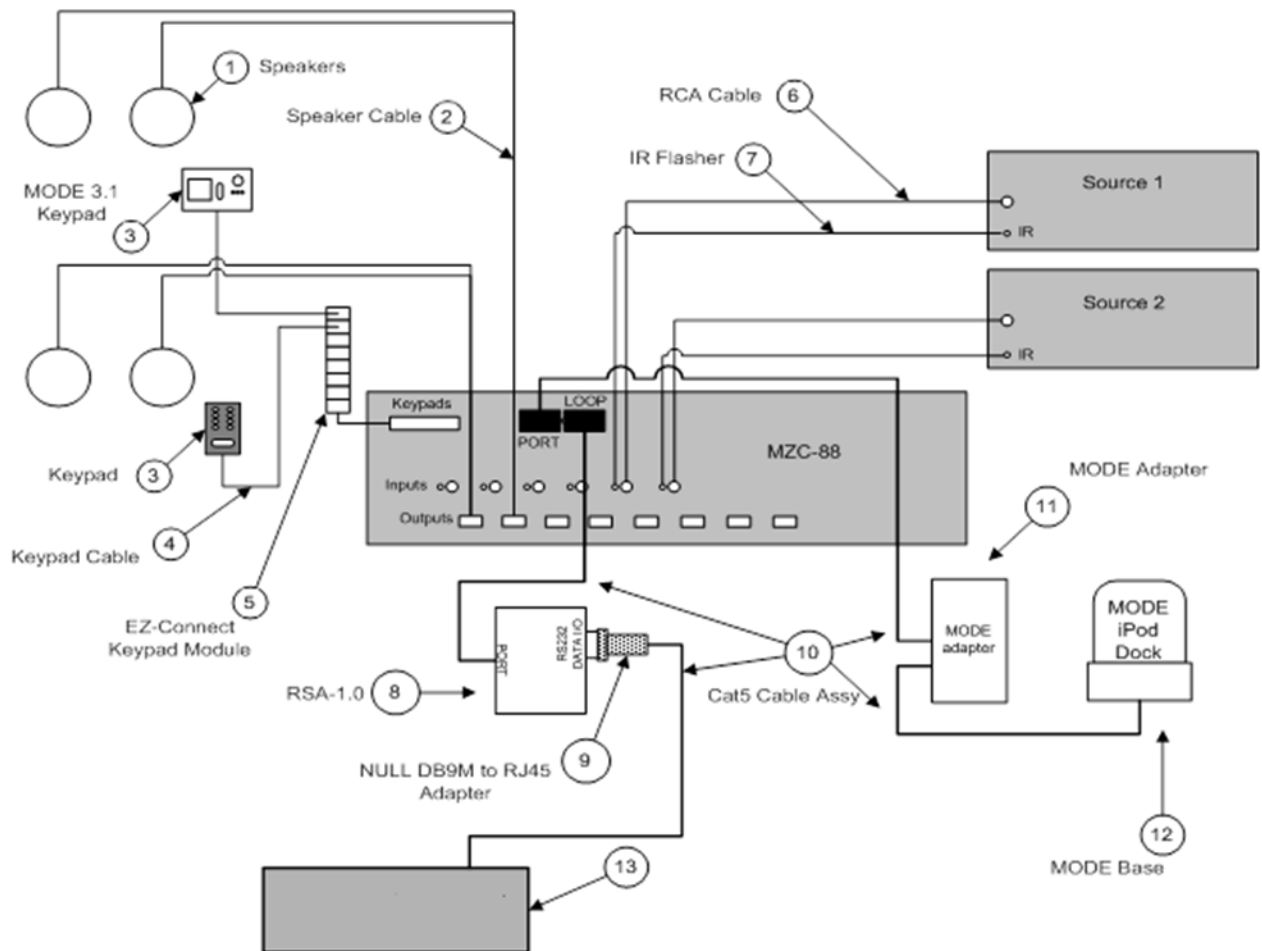
KEYPAD AND IR PROGRAMMING

You can program SpeakerCraft keypads to send IR codes to control source components. You can also add interfaces to the **g!** system that are able to access and use those same IR codes. This section provides a brief overview of the process.

Please note: IR Source Control through MODE Keypads is not supported at this time.

1. In the Configurator, go to the Media tab and right-click Keypads and Interfaces, **Add New Interface**.
2. In the Add New Interface dialog, next to Create from Template, select the desired interface.
3. Next to Connect to Device, leave the selection set to <NONE>.
4. The new interface will appear on the screen.
5. Arrange the buttons to suit your needs.
6. Click the first control (such as a Play button).
7. In the Button Commands dialog, click Add Command.
8. In the Add Command dialog, select **Audio Zone Controller** at left.
9. In the Command Group list, select **Zone 1**.
10. In the Available Commands list, select **Do Zone Command**.
11. In the Options drop-down, select the appropriate keypad button from the list that corresponds to the first control selected in step 6 above.
12. Repeat for the remaining controls.
13. Select this interface into the appropriate source of the SpeakerCraft: it is not necessary to add individual interfaces for each zone.

CONNECTION DIAGRAM



BILL OF MATERIALS

#	Device	Manufacturer	Part Number	Protocol	Connector Type	Notes
1	Speakers	N/A	N/A	Analog	Wire	
2	Speaker Cable	N/A	N/A	Analog	Wire	
3	Keypad	SpeakerCraft	Various	Serial	Spring Terminal	
4	Keypad Cable	Installer	N/A	Serial	Wire	5C 28-14AWG (alternatively cat5)
5	EZ-Connect Keypad Module	SpeakerCraft	KZM-10	SCSI	SCSI	5C 28-14AWG (alternatively cat5)
6	RCA Cable	N/A	N/A	Analog	RCA X RCA	
7	IR Flasher	Various	N/A	IR	Mini Jack X IR Flasher	Not included
8	RSA-10	SpeakerCraft	RSA-10	RS485 / 232	RJ-45 Female / DB-9 Male	Power provided by MZC 88 Loop Port or Optional SC PS-1
9	NULL Modem DB9M to RJ45 Adapter	ELAN	HA-CB-328	RS-232	DB-9 Female X RJ-45 Female	
10	Cat5 Cable Assy.	Installer	N/A	RS-232	RJ-45 Male X RJ-45 Male	Must connect all 8 wires
11	MODE Adapter	SpeakerCraft	N/A	RS-485	RJ-45 Female	Requires SpeakerCraft PS-3 Power Supply or other 24v to
12	MODE Base	SpeakerCraft	N/A	RS-485	RJ-45 Female	pass power to dock. OR directly power dock with 12v 1A PS
13	gl System Controller	ELAN	Various (e.g. HC 12)	RS-232	RJ-45 Female	

g! CONFIGURATION DETAILS

The following table provides settings used in the **g!** Configurator. Please refer to the *g! Configurator Reference Guide* for more details.

In the table below:

- “<Select>” Select the appropriate item from the list (or drop-down) in the Configurator.
- “<User Defined>”, etc. Type in the desired name for the item.

Devices	Variable Name	Setting	Comments
Communication Devices	Name	<User Defined> (Default: New Device)	
	Type	Serial Port	
	Communication Type	Standard Connection	
	Location	<User Defined> (Not Required)	
	Com Port	<Select>	
Tuners	Name	<User Defined>	
	Type	SpeakerCraft MZC Internal Tuner	
	Tuner ID	<User Defined>	Choose the corresponding Tuner module (i.e. Internal tuner one is tuner ID 1)
	Settings	<Select>	Choose the Zone Changer where this tuner resides
Audio Zone Controllers	Name	<User Defined> (Default: SpeakerCraft MZC-88)	
	Device Type	SpeakerCraft MZC-88	
	Location	<User Defined> (Not Required)	
	Comm Device	<Select> (Default: New Device)	
	Settings	<Select>	Choose RSA Installed when using a RSA-1.0 (Recommended)
Keypad Controllers*			*Skip if not using MODE iPod Dock
	Name	<User Defined> (Default: SpeakerCraft Peripheral Device)	
	Device Type	SpeakerCraft Peripheral Device	
	Address	<Select>	Match Address configured on base of unit
Keypads and Interfaces*	Settings	<Select>	Choose the Zone Changer the MODE adapter is connected to
			*Skip if not using MODE iPod Dock
	Name	<User Defined> (Default: New Interface)	
	Create from Template	iPod via SpeakerCraft MODE	
	Connect to Device	<Select> SpeakerCraft Peripheral Device	Add this keypad as a source below
<Other RS-232 Sources>	Add any other RS-232 controlled sources. Refer to the Integration Note for each specific source device.		
Other Audio Devices / Interfaces	Name	<User Defined>	See Note 1
	Template	<Select>	
	Default Device	<Select>	Select the RS-232 or IR controlled source for this interface
	Display Name	<User Defined>	This text appears on the source button in the Viewer Interface
Zones	Name	<User Defined>	
	Display	<N/A>	
	Universal Receiver	<Select>	
	Configuration Interface	<Select>	
	<Sources List>	<N/A>	Set sources to show/hide on each zone
Tab Layout	Interface Tabs	<Select>	For each touchscreen: Remove any unused zones into Available Zones to remove from the viewer, then set the preferred tab order

Notes:

1. Add interfaces and map all buttons to appropriate commands for sources that do not have a built-in interface.
2. For systems with devices that have controllable volume (such as an AudioTron), select the desired volume (normally 100%).

COMMON MISTAKES

1. Improper setup of the SpeakerCraft. Make sure you complete setup of the SpeakerCraft equipment, and that it functions properly as a stand-alone system, before attempting to connect and control from the **g!** system.
2. Failing to select settings for the internal tuner's or peripheral devices. You must select the appropriate Zone Controller in the settings dialog when you setup SpeakerCraft devices for them to interface with the correct Zone Controller.
3. Incorrect address assignments. SpeakerCraft peripherals have address dials that must be properly configured for operation. Make sure the address settings on any keypads, RSA-1.0, or peripheral devices are correctly configured in EZ-Tools, and **g!**.
4. Selecting the SpeakerCraft Peripheral Interface as a source. You must create a keypad interface that uses the SpeakerCraft Peripheral Interface as its device, and select that keypad interface as the source, *not* the Peripheral Interface.
5. Improper Programming of the RSA-1.0. The RSA-1.0 firmware must be flashed to the correct type as outlined in **RSA-1.0 Programming** above.
6. Connecting to the Control Port instead of the RS-232 Data I/O port on the RSA-1.0. Control Port on the RSA-1.0 is used only during the programming phase.
7. Connecting directly to the MZC for control. Neither the control port nor the RS232 port on the MZC should be used during normal control operation. You should only connect directly to the MZC when programming the unit through EZ-Tools.
8. Incorrect dipswitch settings. The RSA-1.0 has a Programming dipswitch that should be set to OFF during normal operation. The MZC has a Firmware Upgrade switch that should be set to OFF during normal operation.
9. Trying to control the SpeakerCraft with a straight DB9-to-RJ45 (HA-CB-308) connected to the RSA-1.0's data port. You must use a NULL connection (HA-CB-328) for control through the RSA-1.0.
10. Not configuring a keypad for every zone. If a keypad is not configured in a zone controlled through **g!**, **g!** will not be able to track state correctly.